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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.            |
|---|-------------|----------------------|---------------------|-----------------------------|
| 10/667,255  | 09/19/2003  | Michael A. Niemiro   | 920047-94540        | 1143                        |
| 23644   | 7590        | 08/10/2005           |                     |                             |
| BARNES & THORNBURG<br>P.O. BOX 2786<br>CHICAGO, IL 60690-2786 |             |                      |                     | EXAMINER<br>DEVORE, PETER T |
|   |             |                      | ART UNIT<br>3751    | PAPER NUMBER                |

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |                 |
|------------------------------|-----------------|-----------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s)    |
|                              | 10/667,255      | NIERNIRO ET AL. |
|                              | Examiner        | Art Unit        |
|                              | Peter T. deVore | 3751            |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 13 May 2005.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 2-4 and 6-10 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 2-4 and 6-10 is/are rejected.

7) Claim(s) 6 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 9/19/03 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/13/05.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## DETAILED ACTION

The indicated allowability of claims 2-4 and 6-10 is withdrawn in view of the newly discovered references to Hrynewycz, Usry, and Loeb. Rejections based on the newly cited reference(s) follow.

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the bidirectional optical isolator, Schmidt trigger, and processor must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: the claimed Schmidt trigger inverting buffer is not described in the specification.

Appropriate correction is required.

### ***Claim Objections***

Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to further limit the previous claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Usry.

The Usry reference discloses an apparatus comprising an optical isolator 72, a Schmidt trigger (see col. 4, line 63), and a processor 32.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hrynewycz in view of Loe.

The Hrynewycz reference discloses a flow control system comprising a signal controller (at the end of leads 84 opposite the valve) and a bistable lever valve comprising a flux bracket 80, a coil 83, a valve seat 58, an input tube 59, an armature 73, a closing member 75, and a magnet 75, but remains silent as to the details of the converter. However, the Loe reference discloses a valve controller including a converter for transforming a unipolar signal to a bipolar signal for improved control of the valve. It would have been obvious to employ a converter which transforms a unipolar signal to a bipolar signal in the signal controller of the Hrynewycz device for improved control of the valve. Regarding claim 9, the claimed method is inherently performed during the normal use of the modified Hrynewycz device.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hrynewycz in view of Loe as applied to claim 2 above, and further in view of Loeb.

The Loe reference discloses a converter as discussed supra, but remains silent as to the details of the converter. However, the Loeb reference discloses a similar

converter including an optical isolator and Schmidt trigger (see col. 4, first paragraph). It would have been obvious to select the use of an optical isolator and Schmidt trigger as the signal converter of the modified Hrynewycz device in view of Loeb among the known signal converters as a matter of design choice as any such signal converter would work equally well in the modified Hrynewycz device.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Tew reference discloses a device with a converter comprising an optical isolator and a Schmidt trigger (see col. 4, lines 62-67).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter T. deVore whose telephone number is (571) 272-4884. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pd *PD*

*Justine R. Yu*  
JUSTINE R. YU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700

8/7/05